

WHAT IS CLAIMED IS:

1. An ink package comprising:

an ink accommodating bag in which ink is accommodated and which is formed of a first flexible sheet;

an outer bag which is formed of a second flexible sheet and which encloses the ink accommodating bag such that a space is defined by and between the ink accommodating bag and the outer bag; and

an ink delivering member including a fixing portion to which the outer bag is fixed at an opening thereof and an extending portion which is formed adjacent to the fixing portion so as to extend toward an inside of the outer bag in a first direction of the fixing portion and to which the ink accommodating bag is fixed at an opening thereof;

and wherein the ink delivering member further includes an ink outlet passage through which the ink in the ink accommodating bag is delivered to an exterior of the ink package and a communication passage through which the space is held in communication with the exterior of the ink package.

2. The ink package according to claim 1, wherein the communication passage is formed at least in a state in which the outer bag is fixed to the fixing portion and includes at least a portion which extends in a direction that intersects the first direction of the fixing portion, the fixing portion having at least one seal portion formed on an outer surface thereof that

continuously extends throughout a periphery of the fixing portion.

3. The ink package according to claim 2, wherein the ink delivering member has at least one elongate groove which is formed in the outer surface of the fixing portion and which includes at least a portion extending in the direction that intersects the first direction, the elongate groove forming at least a portion of the communication passage in the state in which the outer bag is fixed to the outer surface of the fixing portion.

4. The ink package according to claim 1, wherein the fixing portion has a cross sectional area larger than a cross sectional area of the extending portion, where the cross sectional areas of the fixing portion and the extending portion are taken along respective planes perpendicular to the first direction of the fixing portion.

5. The ink package according to claim 1, wherein the fixing portion has a circular shape in cross section taken along a plane perpendicular to the first direction of the fixing portion.

6. The ink package according to claim 1, wherein the outer bag includes a pair of walls which are opposed to each other in a second direction perpendicular to the first direction of the fixing portion.

7. The ink package according to claim 6, wherein the fixing portion has a first dimension as measured in the first direction, a second dimension as measured in the second direction, and a third dimension as measured in a third direction which is perpendicular to the first direction and the second direction, the third dimension being larger than the first dimension and the second dimension.

8. The ink package according to claim 7, wherein the second dimension of the fixing portion gradually decreases toward opposite ends thereof in the third direction.

9. The ink package according to claim 1, wherein the communication passage is in the form of a labyrinth having at least one bent portion.

10. The ink package according to claim 9, wherein the communication passage in the form of the labyrinth includes at least two elongate grooves which extend in a direction that intersects the first direction of the fixing portion substantially at right angle and which are connected at corresponding ones of opposite longitudinal end portions thereof by a connecting groove.

11. The ink package according to claim 9, wherein the communication passage in the form of the labyrinth includes at least three elongate grooves which extend in a direction intersecting the first direction of the fixing portion substantially

at right angle, a second one of the at least three grooves being connected, by a first connecting groove, at one of longitudinal opposite end portions thereof to a corresponding longitudinal end portion of a first one of the at least three grooves while the second one of the at least three grooves is connected, by a second connecting groove, at the other of the longitudinal opposite end portions thereof to a corresponding longitudinal end portion of a third one of the at least three grooves.

12. The ink package according to claim 9, wherein the fixing portion includes a plurality of elongate ribs formed on the outer surface thereof and at least one groove each of which is located between adjacent two of the plurality of elongate ribs, at least one of the plurality of elongate ribs being formed with an elongate cutout such that the elongate cutout extends in a longitudinal direction of the at least one of the plurality of elongate ribs, and with two grooves extending from longitudinal opposite ends of the elongate cutout to one and the other of opposite side surfaces of the at least one of the plurality of elongate ribs, respectively.

13. The ink package according to claim 6, wherein the communication passage is formed on one of opposite sides of a plane of the fixing portion, the plane including a connected surface at which the pair of walls of the outer bag are connected.

14. The ink package according to claim 6, wherein the

communication passage is formed on both of opposite sides of a plane of the fixing portion so as to extend in series, the plane including a connected surface at which the pair of walls of the outer bag are connected.

15. The ink package according to claim 1, wherein the space is in a state, upon shipment of the ink package, in which the space is evacuated to a reduced pressure, the ink package further comprising a sealing member which is removably provided so as to close the communication passage.

16. The ink package according to claim 1, wherein each of the first and second flexible sheets is provided by a material which substantially inhibits gases or vapors from permeating therethrough.

17. The ink package according to claim 1, wherein the ink delivering member has a rigidity higher than the first and second flexible sheets.

18. The ink package according to claim 1, wherein the ink delivering member further includes a hollow protruding portion which protrudes from the fixing portion so as to extend in a direction away from the outer bag and which has an inner passage formed therethrough, the communication passage which is formed on the fixing portion communicating at one of opposite ends thereof with the space defined by and between the ink

accommodating bag and the outer bag and at the other of the opposite ends with the inner passage of the hollow protruding portion.

19. The ink package according to claim 18, wherein the fixing portion has a connecting passage which connects the other of the opposite ends of the communication passage and one of opposite ends of the inner passage of the hollow cylindrical portion which is located on the side nearer to the fixing portion.

20. The ink package according to claim 19, wherein the connecting passage includes a first portion which extends in the first direction of the fixing portion and a second portion which extends from the first portion in a direction intersecting the first direction.

21. The ink package according to claim 18, wherein the ink delivering member further includes a cylindrical portion which is formed adjacent to the fixing portion so as to extend therefrom in the direction away from the outer bag, the ink outlet passage being formed through the cylindrical portion, the fixing portion, and the extending portion, one of opposite openings of the cylindrical portion which is remote from the fixing portion and one of opposite ends of the hollow protruding portion which is remote from the fixing portion being located on a same plane.

22. The ink package according to claim 1, wherein the ink package is removably mounted on a main portion of an ink-jet recording apparatus which includes an ink-jet printing head, an ink supply passage for supplying the ink delivered from the ink package to the ink-jet printing head, a positive pressure generating source for generating positively pressurized air, and a positively pressurized air delivering passage through which the positively pressurized air generated by the positive pressure generating source is delivered, the ink package being constructed to be removably mounted on the main portion such that the ink outlet passage of the ink package is connected to the ink supply passage of the main portion while the communication passage of the ink package is connected to the positively pressurized air delivering passage.

23. An ink package comprising:

an ink accommodating bag in which ink is accommodated and which is formed of a first flexible sheet;

an outer bag which is formed of a second flexible sheet and which encloses the ink accommodating bag such that a space is defined by and between the ink accommodating bag and the outer bag and;

an ink delivering member including a fixing portion to which the outer bag is fixed at an opening thereof and an extending portion which is formed adjacent to the fixing portion so as to extend therefrom toward an inside of the outer bag and to which the ink accommodating bag is fixed at an opening

thereof,

and wherein the ink delivering member further includes an ink outlet passage through which the ink in the ink accommodating bag is delivered to an exterior of the ink package, and the space which is defined by and between the ink accommodating bag and the outer bag is in a state, upon shipment of the ink package, in which the space is evacuated to a reduced pressure.

24. The ink package according to claim 23, wherein the ink delivering member has a rigidity higher than the first and second flexible sheets.

25. A method of producing an ink package comprising an ink accommodating bag in which ink is accommodated, an outer bag which encloses the ink accommodating bag such that a space is defined by and between the ink accommodating bag and the outer bag, and an ink delivering member which includes an ink outlet passage through which the ink in the ink accommodating bag is delivered to an exterior of the ink package, the method comprising the steps of:

an evacuating step of evacuating an interior of the outer bag to a reduced pressure with one of opposite ends of the outer bag remote from the ink delivering member being kept in an open state while the ink outlet passage is sealed so as to be isolated from the exterior of the ink package; and

a welding step of welding the said one of the opposite ends

of the outer bag so that the space defined by and between the ink accommodating bag and the outer bag is kept exposed to the reduced pressure.

26. The method according to claim 25, wherein the ink delivering member further includes a communication passage through which the space is held in communication with the exterior of the ink package, the evacuating step being conducted with the communication passage being sealed so as to be isolated from the exterior of the ink package.

27. An ink-jet recording apparatus comprising:
an ink package which includes (a) an ink accommodating bag in which ink is accommodated and which is formed of a first flexible sheet, (b) an outer bag which is formed of a second flexible sheet and which encloses the ink accommodating bag such that a space is defined by and between the ink accommodating bag and the outer bag, and (c) an ink delivering member including a fixing portion to which the outer bag is fixed at an opening thereof and an extending portion which is formed adjacent to the fixing portion so as to extend toward an inside of the outer bag and to which the ink accommodating bag is fixed at an opening thereof, the ink delivering member further including an ink outlet passage through which the ink in the ink accommodating bag is delivered to an exterior of the ink package and a communication passage through which the space is held in communication with the exterior of the ink package; and

a main portion which includes (a) an ink-jet printing head, (b) an ink supply passage for supplying the ink delivered from the ink package to the ink-jet printing head, (c) a positive pressure generating source for generating positively pressurized air, and (d) a positively pressurized air delivering passage through which the positively pressurized air generated by the positive pressure generating source is delivered,

and wherein the ink package is constructed to be removably mounted on the main portion such that the ink outlet passage of the ink package is connected to the ink supply passage of the main portion while the communication passage of the ink package is connected to the positively pressurized air delivering passage.

28. An ink package removably mounted on an ink-jet recording apparatus which includes a main portion including (a) an ink-jet printing head, (b) an ink supply passage for supplying the ink delivered from the ink package to the ink-jet printing head, (c) a positive pressure generating source for generating positively pressurized air, and (d) a positively pressurized air delivering passage through which the positively pressurized air generated by the positive pressure generating source is delivered, the ink package comprising:

an ink accommodating bag in which ink is accommodated and which is formed of a first flexible sheet;

an outer bag which is formed of a second flexible sheet and which encloses the ink accommodating bag such that a space

is defined by and between the ink accommodating bag and the outer bag; and

an ink delivering member including a fixing portion to which the outer bag is fixed at an opening thereof and an extending portion which is formed adjacent to the fixing portion so as to extend toward an inside of the outer bag and to which the ink accommodating bag is fixed at an opening thereof;

wherein the ink delivering member further includes an ink outlet passage through which the ink in the ink accommodating bag is delivered to an exterior of the ink package and a communication passage through which the space is held in communication with the exterior of the ink package,

and wherein the ink package is constructed to be removably mounted on the main portion such that the ink outlet passage of the ink package is connected to the ink supply passage of the main portion while the communication passage of the ink package is connected to the positively pressurized air delivering passage.